In the Claims

What is claimed is:

1. (original) A method of full volume slipping of logical block addresses (LBAs) in a data storage device comprising a data storage area having user data sectors in a user data area and reserve data sectors in a reserve data area wherein each sector in the data storage area has a physical cylinder head sector address (PCHS), the method comprising steps of:

(a) identifying a defective sector in the user data area; and

(b) generating sequentially numbered LBAs wherein the total number of LBAs equals the total number of user physical block addresses (UPBAs) of user sectors, each LBA representing a logical address of a good sector in the user data area, wherein a first LBA corresponds to the UPBA of a first good sector in the user data area, and the LBA of a first good user spare sector consecutively follows the LBA of a last good user sector.

2. (original) The method of full volume slipping according to claim 1, wherein the user data area has a user sector and a user spare sector.

3. (original) The method of full volume slipping according to claim 2, wherein the UPBAs are sequentially numbered with the UPBA of the user spare sector being larger than the UPBA of the user sector, and wherein a first UPBA corresponds to a first PCHS representing a first user sector and a last UPBA corresponds to a last PCHS representing a last user spare sector.

4. (original) The method of full volume slipping according to claim 1, wherein the generating step (b) comprises steps of:

(b)(i) generating a Next Good LBA;

(b)(ii) assigning a Slip Count to each Next Good LBA; and

(b)(iii) generating a user sector slip list having an entry comprising the PCHS, the UPBA, the Next Good LBA, and the Slip Count related to a slipped defective sector.

5. (original) The method of full volume slipping according to claim 3 wherein the data storage area having the reserve data area includes a reserve track, each reserve track having a reserve sector and a reserve spare sector, each sector in the reserve track having a physical block address (PBA), wherein the PBAs are sequentially numbered, the reserve sector being numbered before the reserve spare sector, a first PBA corresponding to a first PCHS representing a first reserve sector in the reserve track and a last PBA corresponding to a last PCHS representing the last reserve spare sector in the reserve track, the method further comprising steps of:

(c) identifying a defective sector in the reserve track; and

(d) generating a reserve slip list having an entry comprising the PCHS and PBA, of the defective sector.

6. (original) A method of redirecting a logical block address (LBA) of a newly-identified defective sector in a user data area in a data storage device having a data storage area having a user data area of sectors and a reserve data area of sectors, the method comprising steps of:

(a) slipping the LBA corresponding to a defective sector in the user data area over a full volume of the user data area; and

(b) redirecting the LBA of the newly-identified defective sector in the user data area to a good sector in the reserve data area.

7. (original) The method of redirecting a LBA according to claim 6, wherein the user data area comprises a user sector and a user spare sector, each sector in the user data area having a user physical block address (UPBA), wherein the UPBAs are sequentially numbered, the UPBA of the user sector being numbered before the UPBA of the user spare sector, a first UPBA corresponding to a first physical cylinder head sector address (PCHS) representing a first user sector, a first UPBA corresponding to a first PCHS representing a first user spare sector consecutively following a last UPBA corresponding to a last PCHS representing a last user sector, and a last UPBA corresponding to a last PCHS representing a last user spare sector, and wherein the step of slipping the LBA corresponding to a defective sector in the user area further comprising steps of:

(c) identifying a defective sector in a user data area; and

(d) generating sequentially numbered LBAs wherein the total number of LBAs equals the total number of UPBAs, each LBA representing a logical address of a good sector in the user data area, a first LBA corresponding to the UPBA of a first good sector in the user data area, and the LBA of a first good user spare sector consecutively following the LBA of a last good user sector.

8. (original) The method of redirecting a LBA according to claim 7, wherein the generating step (d) of the sequentially numbered LBAs further comprises steps of:

(d)(i) generating a Next Good LBAs;

(d)(ii) assigning a Slip Count to each Next Good LBA; and

(d)(iii) generating a user sector slip list comprising an entry having the PCHS, the UPBA, the Next Good LBA, and the Slip Count related to a slipped defective sector.

9. (original) The method of redirecting a LBA according to claim 8 in the data storage area having the reserve data area comprising a reserve track, each reserve track comprising a reserve sector and a reserve spare sector, each sector in the reserve track having a physical block address (PBA), wherein PBAs are sequentially numbered, PBA of the reserve sector being numbered before PBA of the reserve spare sector, a first PBA corresponding to a first PCHS representing a first reserve sector in the reserve track and a last PBA corresponding to a last PCHS representing the last reserve spare sector in the reserve track, the method further comprising steps of:

(e) identifying a defective sector in each reserve track; and

(f) generating a reserve slip list comprising an entry having the PCHS and PBA, of the defective sector.

10. (original) The method of redirecting a LBA according to claim 9, wherein the redirecting step (b) further comprises steps of:

(b)(i) identifying the newly-identified defective sector in the user data area; and

(b)(ii) generating an alternated sector list having a header and an entry

comprising an alternated sector address and a next entry pointer.

11. (currently amended) A method of accessing data in a data storage device having a user data area of sectors and a reserve data area of sectors wherein each sector has a physical cylinder head sector address (PCHS) and each sector in the user data area has a user physical block address (UPBA), the UPBAs being sequentially numbered, the method comprising steps of:

(a) receiving a data access command including a logical block address (LBA); ~~and~~

(b) determining the PCHS corresponding to the LBA using a user sector slip list,

(b)(i) converting the LBA into a UPBA using the user sector slip list; and

(b)(ii) determining the PCHS corresponding to the UPBA.

12. (Canceled)

13. (currently amended) The method of accessing data according to claim 11 ~~12~~, wherein the determining step (b)(ii) further comprises a step of determining the PCHS corresponding to the LBA using an alternate sector list.

14. (original) The method of accessing data according to claim 13, wherein the determining step (b)(ii) further comprises steps of:

(b)(ii)(1) converting the LBA into a UPBA using the user sector slip list;

(b)(ii)(2) determining if the UPBA is alternated to the reserve data area; and

(b)(ii)(3) determining the PCHS of an alternated sector in the reserve data area corresponding to the UPBA.

15. (original) A data storage device comprising:

a data storage area having user data sectors in a user data area and reserve data sectors in a reserve data area wherein each sector in the data storage area has a physical cylinder head sector address (PCHS); and

a controller operable to full volume slip logical block addresses (LBAs) by identifying a defective sector in the user data area, and generating sequentially numbered LBAs wherein the total number of LBAs equals the total number of user physical block addresses (UPBAs) of user sectors, each LBA representing a logical address of a good sector in the user data area, wherein a first LBA corresponds to the UPBA of a first good sector in the user data area, and the LBA of a first good user spare sector consecutively follows the LBA of a last good user sector.

16. (original) The data storage device according to claim 15, wherein the user data area has a user sector and a user spare sector.

17. (original) The data storage device according to claim 16 wherein the UPBAs are sequentially numbered with the UPBA of the user spare sector being larger than the UPBA of the user sector, and wherein a first IJPBA corresponds to a first PCHS representing a first user sector and a last UPBA corresponds to a last PCHS representing a last user spare sector.

18. (original) The data storage device according to claim 17, wherein the controller generates a Next Good LBA and assigns a Slip Count to each Next Good LBA, and generates a user sector slip list having an entry comprising the PCHS, the UPBA, the Next Good LBA, and the Slip Count related to a slipped defective sector.

19. (original) The data storage device according to claim 18 further comprising:

a reserve track in the reserve data area having a reserve sector and a reserve spare sector, each sector in the reserve track having a physical block address (PBA), wherein PBAs are sequentially numbered with the reserve sector being numbered before the reserve spare sector;

a first PBA corresponding to a first PCHS representing a first reserve sector in the reserve track and a last PBA corresponding to a last PCHS representing the last reserve spare sector in the reserve track.

20. (original) The data storage device according to claim 19 wherein the controller is operable to identify a defective sector in the reserve track and generate a reserve slip list having an entry comprising the PCHS and PBA of the defective sector.

21. (original) A disc drive operable with a disc, the drive comprising:

an information storage media on at least one surface of the disc having concentric tracks defined on the media and radial aligned sectors on adjacent tracks; and

means for slipping a logical block address (LBA) corresponding to a defective sector in a user data area over a full volume of the user data area.